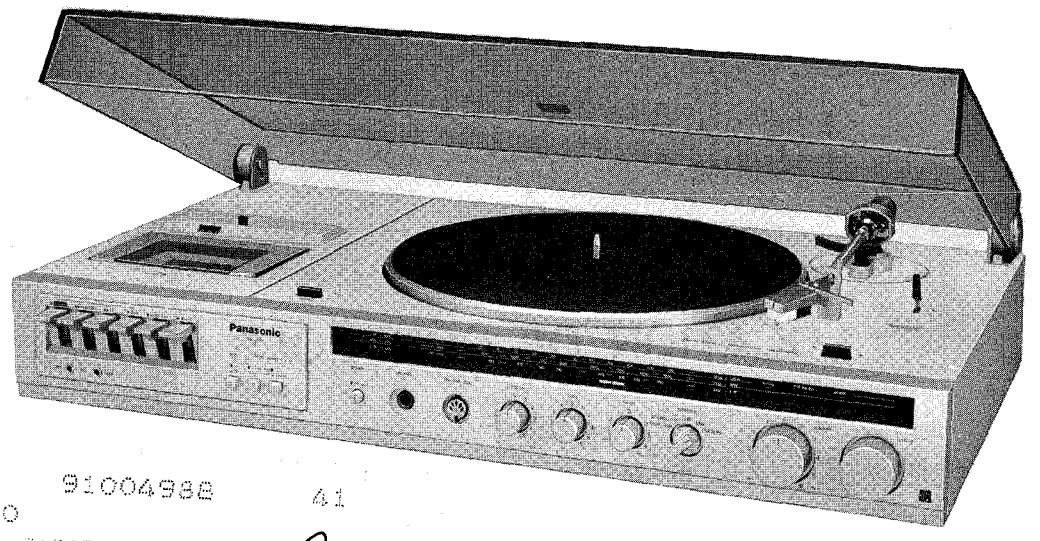
ORDER NO. TSD-8103-397

Service Manual

Stereo Music Centre

SG-2110

FM/MW/LW/FM STEREO RADIO WITH CASSETTE TAPE DECK AND RECORD PLAYER



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SG2110
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Specifications

AMPLIFIER SECTION

Power Output:	RMS 2 x 10W (THD 5%, 4 Ω) One Channel Driven
Frequency Response:	25 Hz ~ 20 kHz, ±3 dB
Input Sensitivity & Impedance:	
Mic;	1.6mV, 3k Ω
Tone Controls:	
Bass;	±10 dB, at 70Hz
Treble;	±10 dB, at 10 kHz

FM TUNER SECTION

Frequency Range:	87.5 MHz ~ 108 MHz
Intermediate Frequency (IF):	10.7 MHz
Sensitivity:	2.5μV (S/N 26 dB MOD. 40 kHz (DIN)
Image Ratio:	40 dB (98 MHz)
Signal/Noise Ratio:	55 dB (at 1 kHz, 60 dB, 40 kHz)
Distortion:	MONO 0.2% (at 1 kHz, 60 dB, 40 kHz)
	STEREO 0.3% (at 1 kHz, 60 dB, 40 kHz)
Stereo Separation:	35 dB (at 1 kHz, 60 dB, 40 kHz)
Selectivity:	50 dB (at 1 kHz, 60 dB, 40 kHz)

AM TUNER SECTION

Frequency Range:	MW; 525 kHz ~ 1605 kHz (571 m ~ 187 m)
	LW; 150 kHz ~ 350 kHz (2000 m ~ 857 m)
Intermediate Frequency (IF):	450 kHz
Sensitivity:	MW; 200μV/m (1 MHz)
	LW; 250μV/m (240 kHz)
Image Ratio:	MW; 45 dB (1 MHz)
	LW; 42 dB (240 kHz)

RECORD PLAYER SECTION

Player System:	Belt-Drive, Automatic Return
Turntable:	28 cm
Turntable Speeds:	33-1/3 and 45 rpm, 2-speed
Wow & Flutter:	0.25% (DIN WTD)
Phonomotor:	DC Motor
Cartridge:	Ceramic (EPC13STH)
Stylus:	Sapphire (EPS41ST)
Stylus Pressure:	5.5 g ± 0.5 g
Frequency Response:	50 Hz ~ 18 kHz

TAPE DECK SECTION

Deck System:	Auto-Stop Cassette System
Track System:	4-Track, 2-Channel
Recording System:	AC Bias (50 kHz)
Erasing System:	AC Erase (50 kHz)
Tape Speed:	4.75 cm/sec. (1-7/8 i.p.s.)
Frequency Response:	50 Hz ~ 10 kHz (NORMAL)
	50 Hz ~ 12.5 kHz (CrO_2)
	50 Hz ~ 12.5 kHz (METAL)
Signal/Noise Ratio:	48 dB (NORMAL)
	48 dB (CrO_2)
	48 dB (METAL)
Wow & Flutter:	0.2% (WRMS)

POWER CONSUMPTION: 55W

POWER SUPPLY: AC 110V, 120V, 220V, 240V, 50/60 Hz

DIMENSIONS: (W x H x D)
Centre Unit: 600 mm x 136 mm x 362 mm

WEIGHT
Centre Unit: 6.3 kg

* Specifications are subject to change without notice for further improvement.

National Panasonic

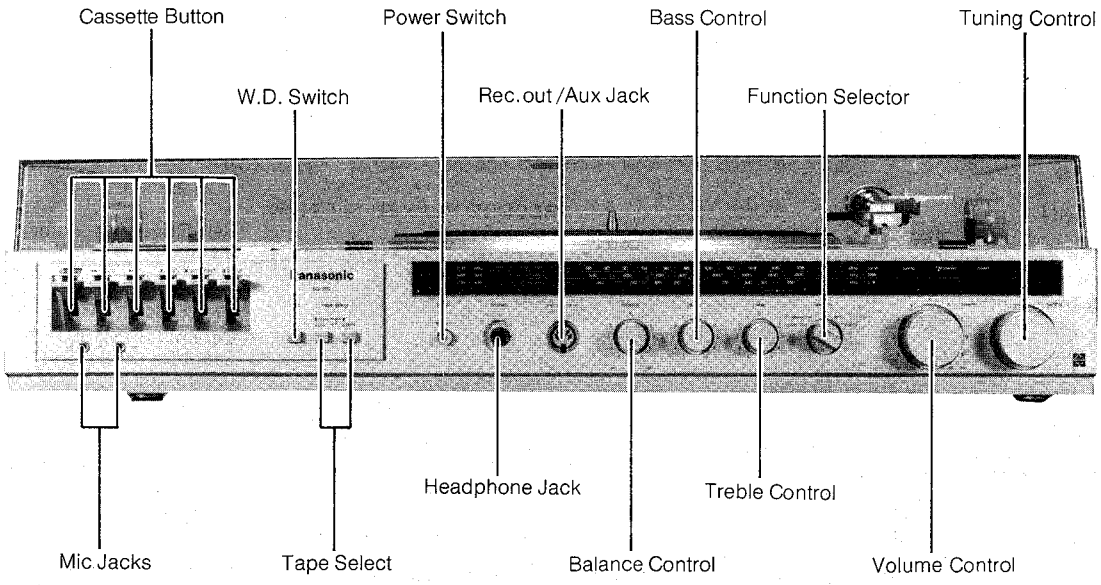
Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

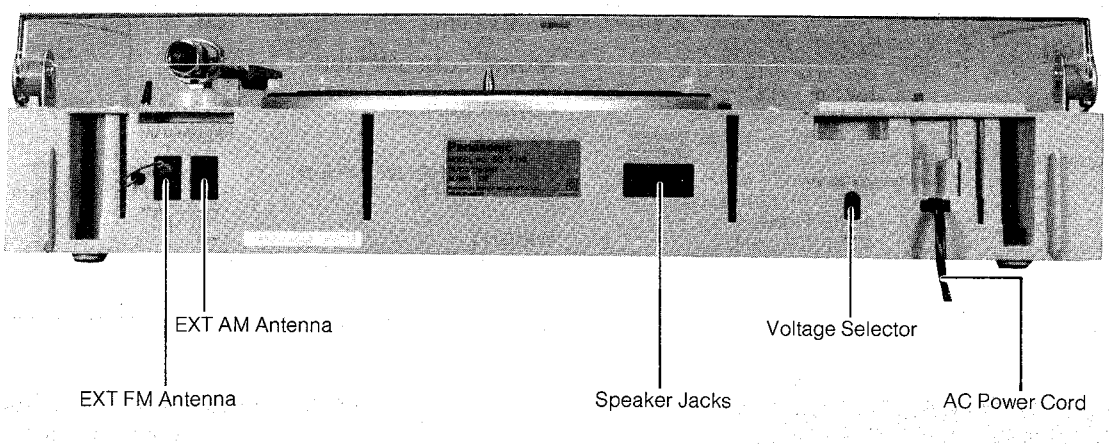
CONTENTS

	Page
Specifications	1
Location of Control	2
Disassembly Instruction	3
Service Aid	3
Alignment Instruction	4, 5
Replacement Parts List	6~9, 16, 18
Schematic Diagram	11
Circuit Board and Wiring Connection	12
IC Block Diagram	13
Block Diagram	14
Servicing the Record Player	15
Servicing the Cassette Tape Deck	20, 21
Mechanical Adjustment of Cassette Tape Deck	*

* Refer to Common Edition of Service Manual (ORDER NO. TSD-8001-362)

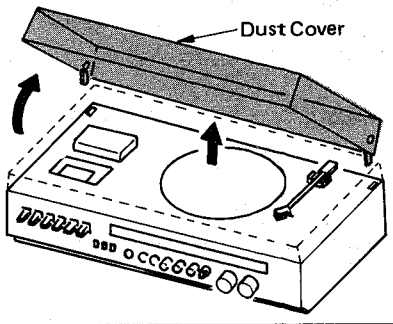
LOCATION OF CONTROLS



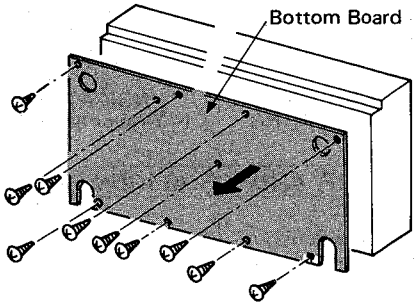


DISASSEMBLY INSTRUCTIONS

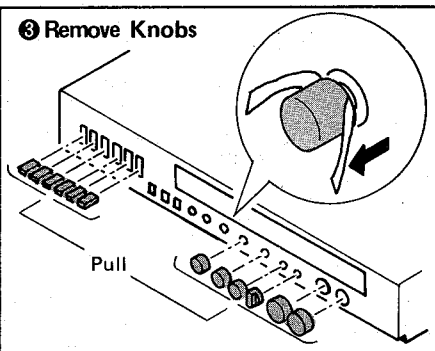
❶ Remove Dust Cover



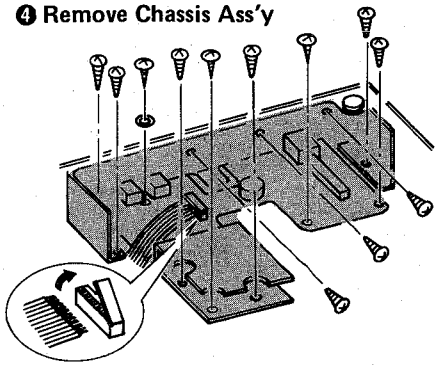
❷ Remove Bottom Board



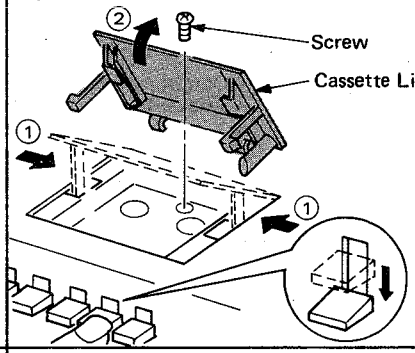
❸ Remove Knobs



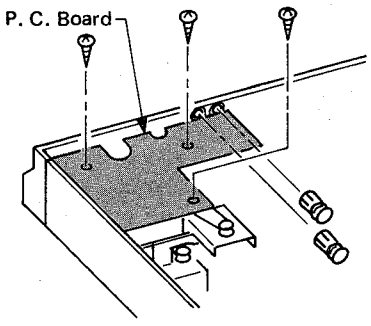
❹ Remove Chassis Ass'y



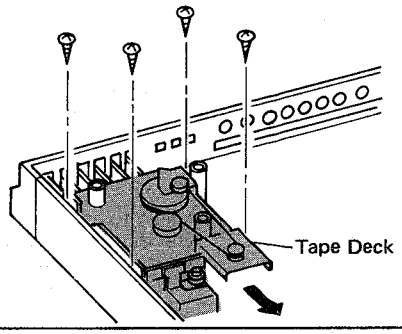
❺ Remove Cassette Lid and Screw



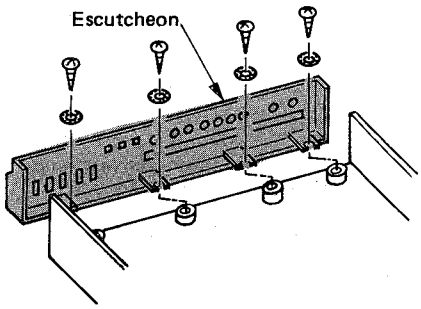
❻ Remove Tape Deck P. C. Board



❼ Remove Tape Deck



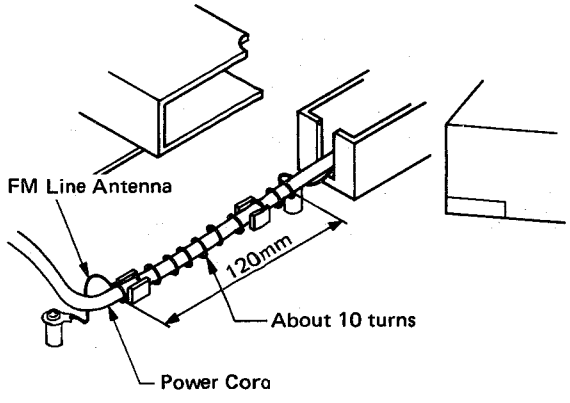
❽ Remove Escutcheon



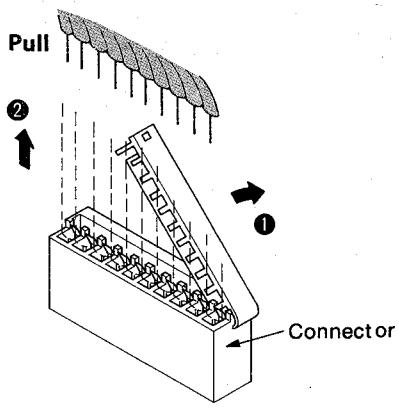
- **To Replace Parts on P.C. Board**
  Radio: Refer to ❶~❹
  Tape Deck: Refer to ❶~❸,❻
- **To Remove Tape Deck**
  Refer to ❶~❸, ❺~❼
- **To Remove Escutcheon**
  Refer to ❶~❽

SERVICE AID

■ Disposition of FM Line Antenna



■ Disconnect of Flat Cable



ALIGNMENT INSTRUCTIONS–1

Control Positions:

1. Volume Control . . . . . Maximum (AM IF and RF, FM RF); Minimum (FM IF)
2. Function Selector . . . . LW, MW, FM AUTO PHONO (AM IF)
3. Output of signal generator should be no higher than necessary to obtain output reading.
4. Make certain that speaker system is connected to the receiver when aligning.

STEP	SIGNAL GENERATOR OR SWEEP GENERATOR		RADIO DIAL SETTING	INDICATOR (VTVM or SCOPE)	ADJUST	REMARKS
	CONNECTION	FREQUENCY				
AM-IF AND RF ALIGNMENT						
1 (AM)	Fashion loop of several turns of wire and radiate signal into loop of receiver.	450 kHz 30% Mod. with 400 Hz	Point of non-interference	Output meter across speaker jack (L).	T202 (AM 1st) T203 (AM 2nd)	Adjust for maximum output.
2 (LW)		150 kHz 30% Mod. with 400 Hz	150 kHz		L202 (LW ANT) L204 (LW OSC)	• Adjust for maximum output by sliding coil L202 along ferrite core. • **Refer to Note.**
3 (LW)		350 kHz 30% Mod. with 400 Hz	350 kHz		CT202 (LW ANT Trimmer) CT204 (LW OSC Trimmer)	Adjust for maximum output. Repeat steps (2) and (3).
4 (MW)		550 kHz 30% Mod. with 400 Hz	550 kHz		L201 (MW ANT) L203 (MW OSC)	• Adjust for maximum output by sliding coil L201 along ferrite core. • **Refer to Note.**
5 (MW)		1500 kHz 30% Mod. with 400 Hz	1500 kHz		CT201 (MW ANT Trimmer) CT203 (MW OSC Trimmer)	Adjust for maximum output. Repeat steps (4) and (5).
Note; Cement antenna coil L202, 201 with wax after completing alignment.						
FM-IF ALIGNMENT						
1	High side through 0.001 μF to point IC101 and TPE (earth).	10.7 MHz (400 kHz SWP).	Point of non-interference (on/ about 98 MHz).	Connect vert. amp. input of scope to point TP201 and TP202 (earth).	T101 (FM 1st)	• Adjust for fmaximum amplitude and symmetrical curve. • **Refer to Note.**
2					T201 (FM 2nd)	Adjust for maximum amplitude and proper linearity between about ± 100 kHz markers.
Note: Before allgning step 1, turn the cores of T201 fully counterclockwise.						
FM-RF ALIGNMENT						
1	Connect to EXT. FM antenna terminal through Dummy antenna. (75 Ω)	87.35 MHz 30% Mod. with 400 Hz	87.35 MHz	Output meter across speaker jack (L).	L102 (FM OSC Coil)	Adjust for maximum output.
		90 MHz 30% Mod. with 400 Hz	90 MHz		L101 (FM ANT Coil)	
2		106 MHz 30% Mod. with 400 Hz	106 MHz		CT101 (FM ANT Trimmer)	Adjust for maximum output. Repeat steps (1) and (2).
		108.3 MHz 30% Mod. with 400 Hz	108.3 MHz		CT102 (FM OSC Trimmer)	

Notes: 1. As three output readings will be present, adjustments must be made at center frequency.
2. To correct the drift of FM band coverage (87.5 or 108 MHz), adjust the coil L102 and the trimmer CT102.

ALIGNMENT INSTRUCTIONS–2

■ FM Stereo Alignment

Control Positions:
Tuner: Volume Control . . . . . Audible level of speaker sound
Bass Control . . . . . Center
Treble Control . . . . . MIN
Band Selector . . . . . FM AUTO
Balance Control . . . . . Center

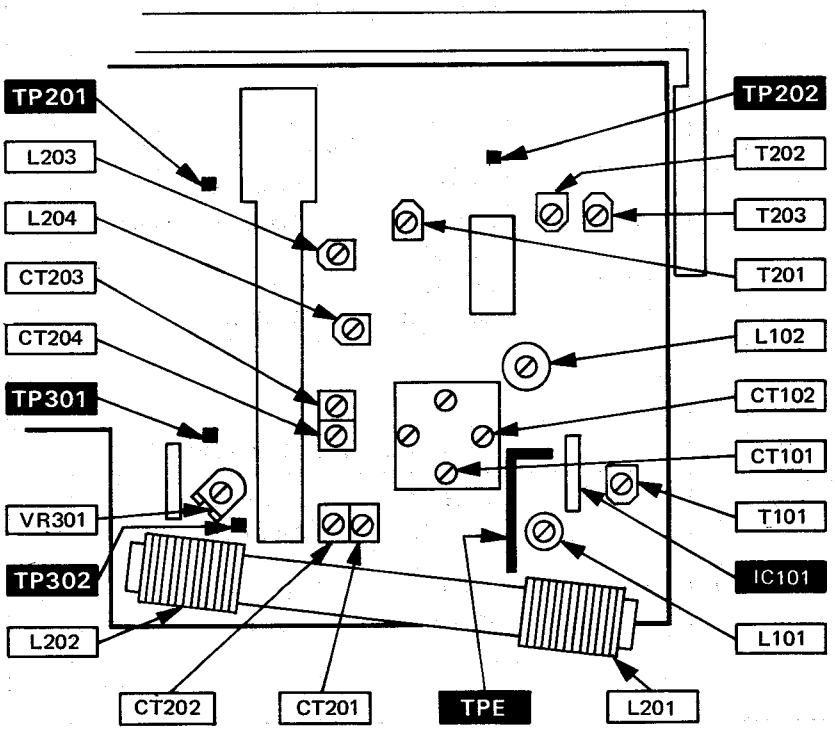
EQUIPMENT CONNECTION	ADJUST	REMARK
Connect frequency counter to TP302 and TP301 (earth) at 98 MHz, non modulation 60 dB input (Mono Signal).	VR301	Adjust VR301 for 76 kHz ± 400 Hz on frequency counter reading.

■ Cassette

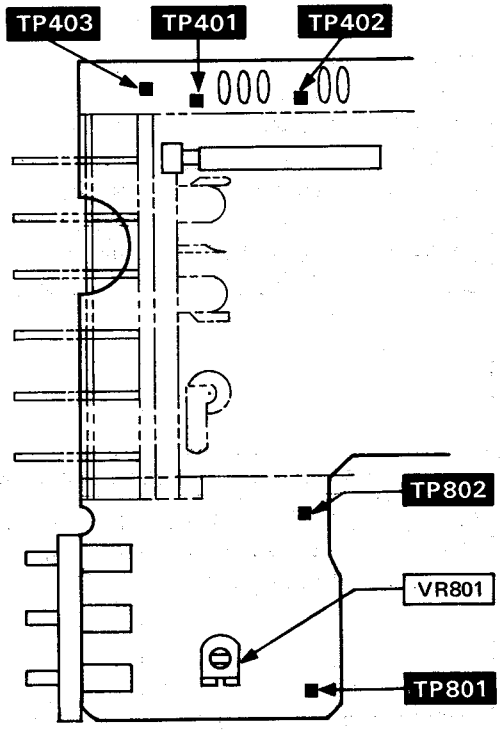
Notes:
1. Function Selector . . . . . tape/aux
2. Tape Deck Condition . . . . . Recording Condition
3. Whistle Defeat Switch . . . . . A Side

STEP	ALIGNMENT ITEM	VTVM CONNECTION		TAPE SELECTOR	ADJUST	REMARK
		POSITIVE	NEGATIVE			
1	Erase bias	TP802	TP801	METAL	L 801	Adjust L801 for 51±0.1KHz reading on VTVM.
					VR801	• Adjust VR801 for 150 mV reading on VTVM. • Erase bias is between 140 ~ 165 mW when change the whistle defeat switch to "B".
2	Recording bias	TP402 (L-channel) TP401 (R-channel)	TP403		–	• Confirm 15.5 ~ 17.5 V indication VTVM. • Recording bias is between 13.5 ~ 18.5 V when change the whistle defeat switch to "B".
3	R/P Head Azimuth	Speaker terminal	Speaker terminal	NORMAL	R/P Head Screw	• Adjust screw for max. indication on VTVM.

ALIGNMENT POINTS (RADIO)



ALIGNMENT POINTS (TAPE DECK)



REPLACEMENT PARTS LIST

NOTES:

1. Components identified by ⚠ have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.
2. Parts No. listed in this parts list are of service parts.

Ref. No.	Part No.	Description	Per Set (pcs.)
TRANSISTORS			
Q101	2SC1359-B	FM IF Amp.	1
Q201	2SC828AR	Switching	1
Q202	2SA722-S	Switching	1
Q203, 204	2SC945L	Switching	2
Q401, 402	2SC945L	REC. Amp.	2
Q403, 404	2SC828AR	Muting	2
Q601, 602	2SC945L	Ph/Mic Amp.	2
Q801	2SC1383NC	REC, BIAS Amp.	1
INTEGRATED CIRCUITS			
IC101	AN7213	FM RF Conv.	1
IC201	AN7222	FM/AM Conv.IF DET	1
IC301	TA7343P	FM MPX	1
IC401	BA328	Cassette R/P Amp.	1
IC 701	HA1394	Power Amp.	1
IC901 ⚠	μPC7812H	Voltage Regulator	1
DIODES			
D101	MA162A	FM AGC	1
D102	MA345LF	FM AFC	1
D201	20A90	RECT.	1
D202	SLP256B	Tuning IND	1
D203, 204	MA162A	RECT.	2
D301	SLP156B	FM ST. EYE	1
D901-904	DS135TD	RECT.	4
D905	SLP156B	Power IND.	1
FUSES AND COMPONENT COMBINATION			
F901 ⚠	XBAS2C08T2A	Fuse T800mA	1
F902 ⚠	XBAS2C20T2A	Fuse T2A	1
Z101	SXAPFWB4	B.P.F., FM	1

Ref. No.	Part No.	Discription	Per Set (pcs.)
COILS AND TRANSFORMERS			
L101	SLD4N22-M	ANT Coil, FM	1
L102	SL04P20-P	OSC Coil, FM	1
L201, 202	SLF6F14-O	Ferrite ANT	1
L203	SL02M6-M	OSC Coil, MW	1
L204	SL01M8-M	OSC Coil, LW	1
L801	SLO9Z38-K	Bias OSC	1
T1 ⚠	SLT5L 122-V	Power Trans	1
T101	SLI4M102-M	IFT, FM 1st	1
T201	RLI4M101-M	IFT, FM 2nd	1
T202	SLI9M102-M	IFT, AM 1st	1
T203	SLI9M202-M	IFT, AM 2nd	1
CF201, 202	SVF107MA53	CFT, FM	1
VARIABLE RESISTORS			
VR301	EVTS3MA00B14	Preset 10KΩB	1
VR501, 502	EWKG7A054A54	Volume 50KΩA	1
VR503, 504	EWHG7AF25G15	Balance 100KΩ.G	1
VR701 -704	EWCSMAF25C54	Bass, Treble 50KΩC	2
VR801	EVTS3MA00B24	Preset 20KΩB	1
VARIABLE CAPACITORS AND THERMISTOR			
CV101, 102 201, 101 (CT101, 102)	PVC22KT-LD1	Variable Capacitor with Trimmer (CT101, 102)	1
CT201-204	SCVCTY211D31	Trimmer	2
TH801	ERTD2FHK202S	Thermister	1
SWITCHES			
S1	ESE3742	Voltage Selector	1
S801-803	SSH318	Tape Selector,W.D.S.	1
S901	SSH134	Power	1
SF1-7	SSR178	Function	1
ST1-6	ESD80605	Rec/Play	1
OTHER AND PACKING			
1	SQX50348	Inst. Book	1
2	SPN4570	Carton Box	1
3	SPN4572	Pad	1
4	SPN3930	Pad, Dust Cover	1
5	SPP108	Poly Cover	1

REPLACEMENT PARTS LIST

Numbering System of Resistor

Wattage		Value	
Three Letters	One or Two Letters	Two or Three Letters	Three or Four Letters

Example:

E R D 2 5 T J 1 0 1

Resistor Type	Tolerance
ERD: Carbon Film	F: ±1%
ERC: Solid	J: ±5%
ERX: Metal Film	K: ±10%
ERG: Metal Oxide Film	
ERO: Hi Stability Metal Film	
ERF: Flameproof Wire-Wound Bath-Tube	
ERQ: Fuse Type Metal Film	

Ref. No.	Part No.	Description (Unit: Ω)		Per Set (pcs.)
RESISTORS				
R101	ERD25FJ331	330	1/4W	1
R102	ERD25FJ101	100	1/4W	1
R104	ERD25TJ224	220k	1/4W	1
R106	ERD25FJ102	1k	1/4W	1
R107	ERD25FJ331	330	1/4W	1
R108	ERD25TJ224	220k	1/4W	1
R109	ERD25TJ563	56k	1/4W	1
R110	ERD25JS104	100k	1/4W	1
R111	ERD25FJ560	56	1/4W	1
R201	ERD25FJ272	2.7k	1/4W	1
R202	ERD25FJ331	330	1/4W	1
R203	ERD25FJ822	8.2k	1/4W	1
R204	ERD25FJ471	470	1/4W	1
R205	ERD25FJ561	560	1/4W	1
R206	ERD25FJ471	470	1/4W	1
R213	ERD25TJ474	470K	1/4W	1
R221	ERD25FJ470	47	1/4W	1
R222	ERD25FJ822	8.2k	1/4W	1
R223	ERD25TJ474	470k	1/4W	1
R225 ⚠	ERG1ANJP820S	82	1W	1
R227	ERD25FJ562	5.6k	1/4W	1
R229	ERD25FJ103	10k	1/4W	1
R230	ERD2FCG471P	470	1/4W	1
R231	ERD25FJ332	3.3k	1/4W	1
R232	ERD25TJ155	1.5M	1/4W	1
R233	ERD25FJ562	5.6k	1/4W	1
R234	ERD25FJ272	2.7k	1/4W	1
R235	ERD25FJ470	47	1/4W	1
R236	ERD25FJ103	10k	1/4W	1
R237	ERD25FJ474	470k	1/4W	1
R238	ERD25FJ103	10k	1/4W	1
R239	ERD25TJ334	330k	1/4W	1
R240	ERD25TJ224	220k	1/4W	1
R241	ERD25TJ334	330k	1/4W	1
R301	ERD25FJ102	1k	1/4W	1
R303	ERD25FJ121	120	1/4W	1
R304	ERD25TJ104	100k	1/4W	1
R305, 306	ERD25FJ272	2.7k	1/4W	2
R307	ERD25FJ102	1k	1/4W	1
R309, 310	ERD25TJ223	22k	1/4W	2
R401, 402	ERD25TJ473	47k	1/4W	2
R403, 404	ERD25FJ101	100	1/4W	2
R405, 406	ERD25TJ104	100k	1/4W	2
R407, 408	ERD25TJ393	39k	1/4W	2
R409, 410	ERD25TJ184	180k	1/4W	2
R411, 412	ERD25FJ472	4.7k	1/4W	2
R413, 414	ERD25TJ153	15k	1/4W	2
R415, 416	ERD25FJ561	560	1/4W	2
R417, 418	ERD25FJ152	1.5	1/4W	2
R419, 420	ERD25TJ184	180k	1/4W	2
R421, 422	ERD25FJ472	4.7k	1/4W	2
R423	ERD25FJ472	4.7k	1/4W	1
R425, 426	ERD25TJ273	27k	1/4W	2
R427, 428	ERD25FJ151	150	1/4W	2
R429, 430	ERD25TJ224	220k	1/4W	2
R431, 432	ERD25FJ103	10k	1/4W	2
R501, 502	ERD25TJ104	100k	1/4W	2
R503, 504	ERD25TJ393	39k	1/4W	2
R505, 506	ERD25TJ683	68k	1/4W	2
T507, 508	ERD25TJ104	100k	1/4W	2
R509, 510	ERD25TJ183	18k	1/4W	2
R511, 512	ERD25FJ272	2.7k	1/4W	2
R601, 602	ERD25TJ684	680k	1/4W	2
R603, 604	ERD25FJ332	3.3k	1/4W	2
R605, 606	ERD25TJ155	1.5M	1/4W	2
R607, 608	ERD25FJ222	2.2k	1/4W	2
R609, 610	ERD25FJ270	27	1/4W	2
R611	ERD25FJ102	1k	1/4W	1
R612	ERD25FJ220	22	1/4W	1
R701, 702	ERD25TJ104	100k	1/4W	2
R703, 704	ERD25TJ563	56k	1/4W	2
R705, 706	ERD25FJ272	2.7k	1/4W	2
R707, 708	ERD25TJ563	56k	1/4W	2
R709, 710	ERD25TJ153	15k	1/4W	2
R711, 712	ERD25FJ392	3.9k	1/4W	2
R713, 714	ERD25FJ471	470	1/4W	2
R715, 716	ERD25FJ152	1.5k	1/4W	2
R717, 718	ERD25TJ104	100k	1/4W	2
R719, 720	ERD25FJ221	220	1/4W	2
R721, 722	ERD25FJ221	220	1/4W	2
R723, 724	ERD25FJ102	1k	1/4W	1
R801	ERD25FJ1R0	1	1/4W	1
R802 ⚠	ERD2FCJ4R7P	4.7	1/4W	1
R803	ERD25FJ222	2.2k	1/4W	1
R804	ERD25TJ153	15k	1/4W	1
R805	ERD25FJ222	2.2k	1/4W	1

REPLACEMENT PARTS LIST

Ref. No.	Part No.	Description (Unit: Ω)		Per Set (pcs.)
R806	ERD25FJ152	1.5k	1/4W	1
R807	ERD25FJ471	470k	1/4W	1
R809	ERD25FJ682	6.8K	1/4	1
R811 ⚠	ERQ12HJ330	33	1/2W	1
R812 ⚠	ERD25FJ101	100	1/4W	1
R814 ⚠	ERQ12HJ100	10	1/2W	1
R901	ERD25FJ102	1K	1/4W	1

Numbering System of Capacitor

Type	Voltage	Value	Tolerance
Four Letters	One or Two Letters	Two to Five Letters	One or Two Letters

Example:

E C K D 1 H 3 3 3 M D

Capacitor Type	Tolerance
ECCD: Temperature Compensating Ceramic	C: ±0.25pF
ECKD: High Dielectric Constant Ceramic	D: ±0.5pF
ECQM: Polyester	F: ±1pF
ECQS: Polystyrene Film	J: ±5%
ECFD: Semiconductor Ceramic	K: ±10%
ECEA: Electrolytic	M: ±20%
ECEB: Electrolytic	P: +100, −0%
ECET: Electrolytic	Z: +80, −20%
ECSF: Tantalum	

Ref. No.	Part No.	Description Unit: μF (p ..... pF)		Per Set (pcs.)
CAPACITORS				
C1	ECFD1V103KD	0.01	35V	1
C101	ECKD1H103Z	0.01	50V	1
C102	ECCD1H220K	22p	50V	1
C103	ECKD1H223Z	0.022	50V	1
C104, 105	ECKD1H103Z	0.01	50V	2
C106	ECCD1H030C	3p	50V	1
C107	ECCD1H150K	15p	50V	1
C108	ECKD1H223Z	0.022	50V	1
C109	ECFD1V103KD	0.01	35V	1
C110	ECKD1H223Z	0.022	50V	1
C111	ECKD1H103Z	0.01	50V	1
C114	ECKD1H223Z	0.022	50V	1
C115	ECCD1H150K	15p	50V	1
C116	ECCD1H1R5	1.5p	50V	1
C201	ECEA1AS101	100	10V	1
C202	ECEA50Z2R2	2.2	50V	1
C203	ECEA50Z1	1	50V	1
C204	ECKD1H102Z	1000p	50V	1
C205, 206	ECFR1V223KD	0.022	35V	2
C207	ECEA50Z1	1	50V	1
C208	ECEA1AS221	220	10V	1
C209	ECFD1V333KD	0.033	35V	1
C210	ECCD1H050D	5p	50V	1
C211	ECCD1H220K	22p	50V	1
C212	ECFD1V473KD	0.047	35V	1
C214	ECCD1H680K	68p	50V	1
C215	ECQS1181JZ	180p	125V	1
C216	ECQS1331JZ	330p	125V	1
C217	ECCD1H070D	7p	50V	1
C218	ECCD1H100F	10p	50V	1
C219	ECKD1H331K	330p	50V	1
C220	ECCD1H151K	150p	50V	1
C222	ECEA1CS330	33	16V	1
C223	ECKD1H103Z	0.01	50V	1
C224, 225	ECEA1HS100	10	50V	2
C226	ECKD1H101K	100p	50V	1
C228	ECEA1AS471	470	10V	1
C230	ECKD1H2232	0.022	50V	1
C231	ECEA50MR1R	0.1	50V	1
C232	ECFD1V103KD	0.01	35V	1
C233	ECKD1H103Z	0.01	50V	1
C235	ECEA25Z4R7	4.7	25V	1
C301	ECEA50M1R	1	50V	1
C302	ECEA50M3R3R	3.3	50V	1
C303	ECOS1102JZ	1000p	125V	1
C304	ECEA50Z1	1	50V	1
C305, 306	ECFD1V183	0.018	35V	2
C307, 308	ECEA2524R7	4.7	25V	2
C309	ECEA1HS100	10	50V	1
C310	ECEA1CS221	220	16V	1
C311, 312	ECKD1H331K	330p	50V	2
C401, 402	ECEA50M3R3R	3.3	50V	2
C403, 404	ECKD1H101K	100p	50V	2
C405, 406	ECKD1H102K	1000p	50V	2
C407, 408	ECEA0JS471	470	6V	2
C409, 410	ECEA1HS100	10	50V	2
C411, 412	ECQM1H332KZ	3300p	50V	2
C413, 414	ECKD1H152K	1500p	50V	2
C415, 416	ECEA50Z3R3	3.3	50V	2
C417, 418	ECFD1V473KD	0.047	35V	2
C419, 420	ECEA50MR1R	0.1	50V	2
C421, 422	ECKD1H182K	1800p	50V	2
C423, 424	ECQM1H562kZ	5600p	50V	2
C425, 426	ECCD1H820K	82p	50V	2
C427, 428	ECQM1H473KZ	0.047	50V	2
C429, 430	ECKD1H1032	0.01	50V	2
C431, 432	ECKD1H1032	0.01	50V	2
C433	ECEA1HS2R2	2.2	50V	1
C603, 604	ECEA50Z1	1	50V	2
C605, 606	ECEA50Z1	1	50V	2
C607	ECEA1CS010	1	50V	1
C608	ECEA1CS100	10	16V	1

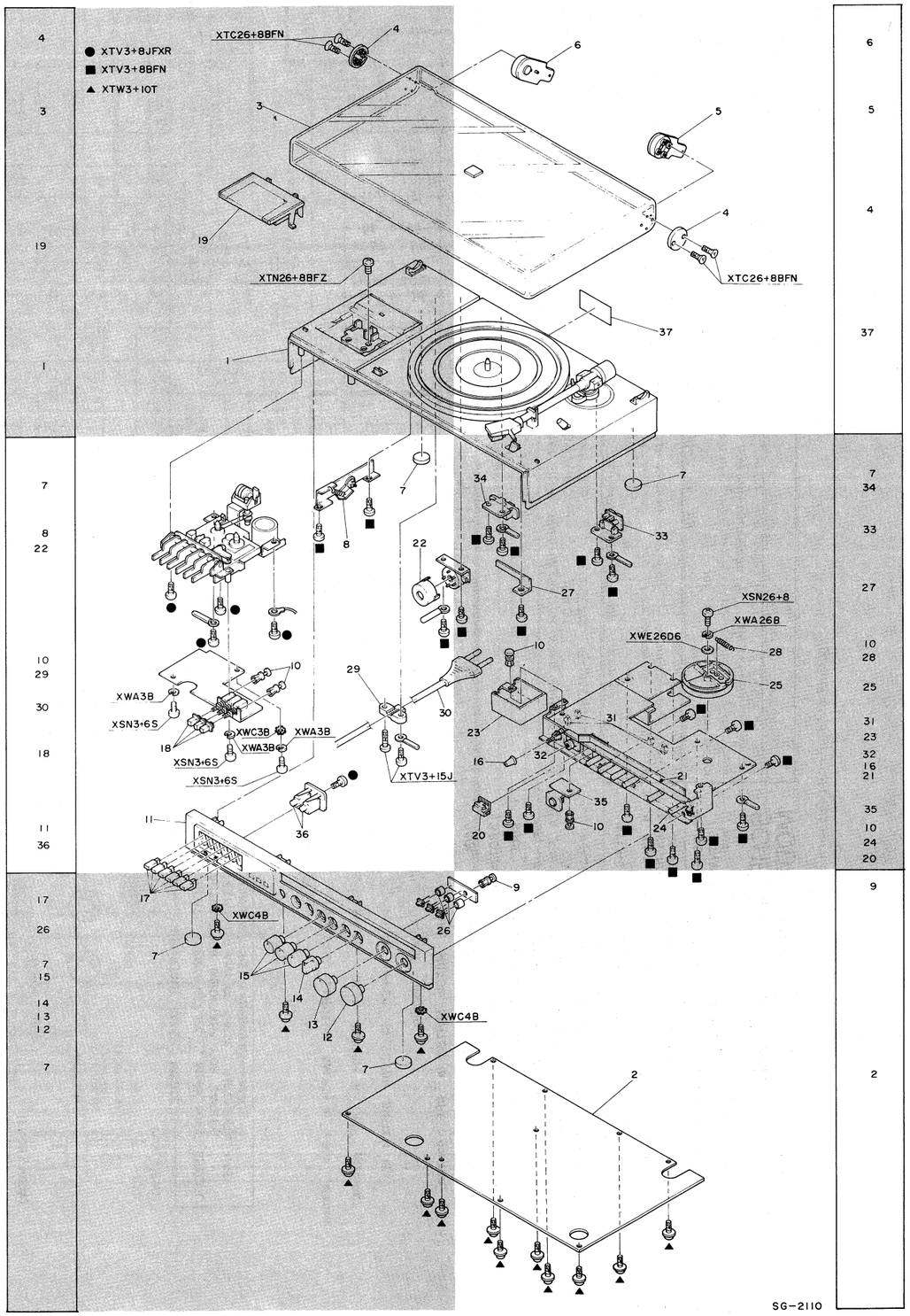
REPLACEMENT PARTS LIST

Ref. No.	Part No.	Description Unit: μF (p .... pF)		Per Set (pcs.)
C609	ECEA1CS330	33	16V	1
C611, 612	ECKD1H101K	100p	50V	1
C701, 702	ECEA25Z4R7	4.7	25V	2
C703	ECEA25Z221	220	25V	1
C705, 706	ECEA1HS100	10	50V	2
C707, 708	ECEA1ES220	22	25V	2
C709, 710	ECFD1V183	0.018	35V	2
C711, 712	ECQM1H104KZ	0.1	50V	2
C713, 714	ECFD1V222KD	2200p	35V	2
C715, 716	ECFD1V103KD	0.01	35V	2
C717, 718	ECEA50MR1R	0.1	50V	2
C719, 720	ECEA1ES101	100	25V	2
C721, 722	ECEA1ES471	470	25V	2
C725, 726	ECKD1H471K	470p	50V	2
C801	ECQS1122JZ	1200p	125V	1
C802	ECQS1562JZ	5600p	125V	1
C803	ECFD1V123KD	0.012	35V	1
C804	ECFD1E683MD	0.068	25V	1
C805	ECEA1CS221	220	16V	1
C806	ECEA1ES220	22	25V	1
C807	ECEA1CS221	220	16V	1
C811, 812	ECCD1H220K	22p	50V	2
C813, 814	ECKD1H101K	100p	50V	2
C815, 816	ECCD1H220K	22p	50V	2
C820	ECEAICS221	220	16V	1
C901 ⚠	ECET35R332SL	3300	35V	1
C903	ECEA5021	1	50V	1
C904	ECKD1H2232	0.022	50V	1
C905	ECFD1V473KD	0.047	35V	1
C906	ECKD1H2232	0.022	50V	1
C907	ECFD1V473KD	0.047	35V	1
C908	ECQS1224MZ	0.22	125V	1

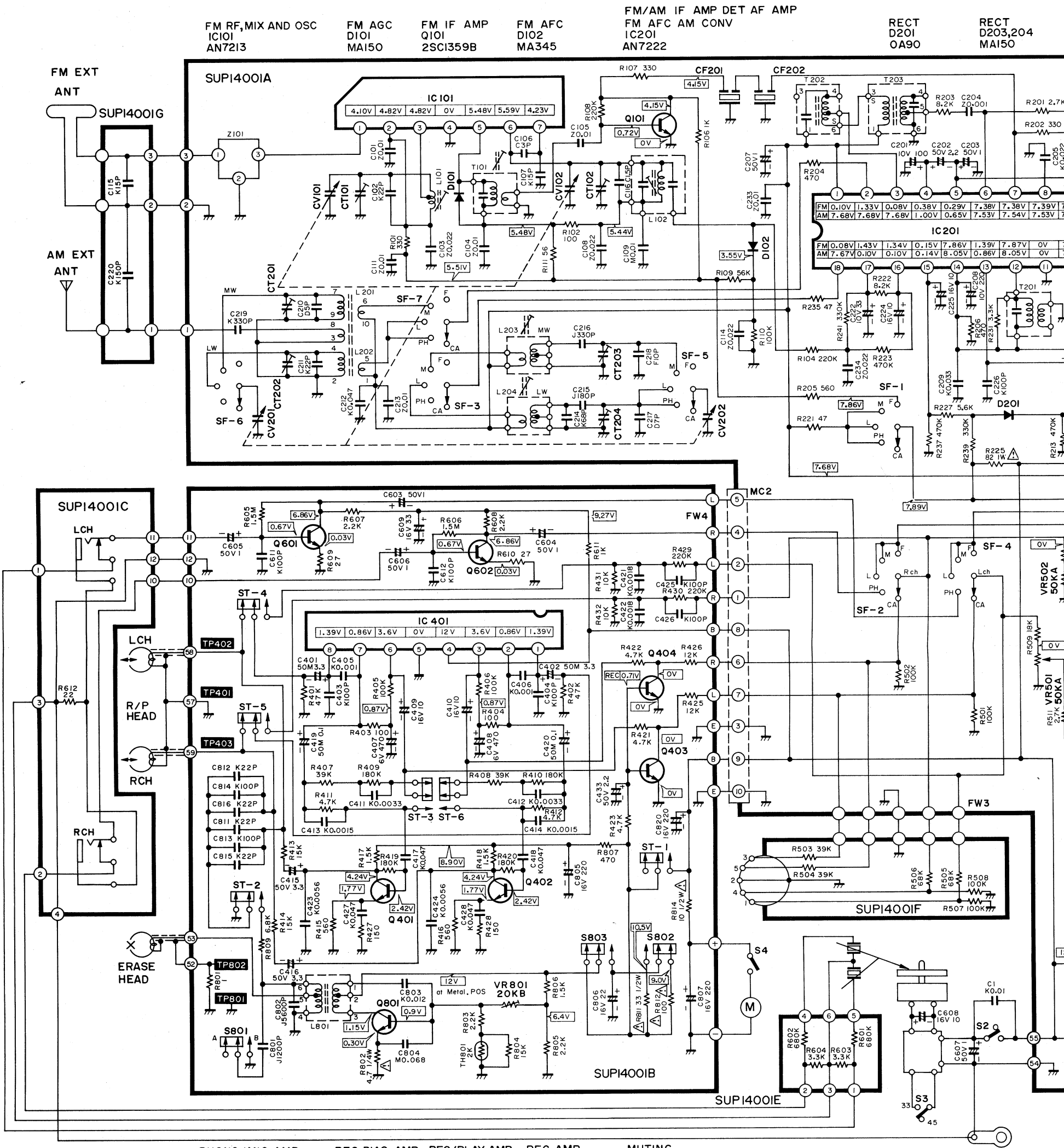
■ **Cabinet and Chassis**

Ref. No.	Part No.	Description	Per Set (pcs.)
1	SKM6840	Cabinet	1
2	SYU444	Bottom Board Ass'y	1
3	SYE890	Dust Cover Ass'y	1
4	SBH9054-5	Cap, Hinge	(2)
5	SBH9056-3	Hing, Right	(1)
6	SBH9058-3	Hing, Left	(1)
7	SHG336	Foot	4
8	SXE174	Eject Arm Ass'y	1
9	SHR9094	Latch A	1
10	SHR969ZA	Latch B	4
11	SYP566	Escutcheon Ass'y	1
12	SBN1002-1	Knob, Tuning	1
13	SBN1004-1	Knob, Volume	1
14	SBN1008-2	Knob, Selector	1
15	SBN1032	Knob, Control	3
16	SBC616-3	Button, Power	1
17	SBC286-6	Button, Cassette	6
18	SBC310-2	Button, Tape Select	3
19	SYE726	Lid, Cassette	1
20	SDP1052	Dial Pointer Ass'y	1
21 ⚠	SGE1384	Blind Plate	1
22 ⚠	RUV387ZC	Cover, Voltage Selector	1
23	SUV226	Cover, Insulator	1
24	SDT9284	Shaft, Tuning	1
25	SDD80-2	Drum, Dial	1
26	SJY5162	Spacer, LED	3
27	SJY9072	Spring	1
28	RDS4170A	Spring, Dial	1
29 ⚠	SHR134	Power Cord Clamp	1
30 ⚠	SJA138	Power Cord	1
31 ⚠	SJF110	Holder, Fuse	4
32	XCJ6P21E-2	Jack, Headphone	1
33	SJS9408	Terminal, DIN ANT	1
34	SJF9208	Terminal, DIN SP	1
35	SJF9102-1	Terminal, 5P	1
36	RJJ48A	Jack, Microphone	2
37	SGN5860	Name Plate	1
	SGN5862	Nam Plate (for DEMKO)	1

PARTS LOCATION OF CABINET AND CHASSIS



SCHEMATIC DIAGRAM M


FM RF, MIX AND OSC IC101 AN7213
FM AGC D101 MA150
FM IF AMP Q101 2SC1359B
FM AFC D102 MA345
FM/AM IF AMP DET AF AMP FM AFC AM CONV IC201 AN7222
RECT D201 0A90
RECT D203,204 MA150
SUP14001A
SUP14001G
SUP14001C
SUP14001B
SUP14001E
SUP14001F
FM EXT ANT
AM EXT ANT
IC101
4.10V 4.82V 4.82V 0V 5.48V 5.59V 4.23V
IC201
FM 0.10V 1.33V 0.08V 0.38V 0.29V 7.38V 7.38V 7.39V
AM 7.68V 7.68V 7.68V 1.00V 0.65V 7.53V 7.54V 7.53V
FM 0.08V 1.43V 1.34V 0.15V 7.86V 1.39V 7.87V 0V
AM 7.67V 0.10V 0.10V 0.14V 8.05V 0.86V 8.05V 0V
IC401
1.39V 0.86V 3.6V 0V 12V 3.6V 0.86V 1.39V
Q101 Q601 Q602 Q401 Q402 Q403 Q404 Q801
D101 D102 D201
CF201 CF202
T202 T203 T201
SF-1 SF-2 SF-3 SF-4 SF-5 SF-6 SF-7
ST-1 ST-2 ST-3 ST-4 ST-5 ST-6
FW3 FW4 MC2
S2 S3 S4 S801 S802 S803
VR501 50KA VR502 50KA VR801 20KB
TP401 TP402 TP403 TP801 TP802
LCH RCH R/P HEAD ERASE HEAD
PHONO/MIC AMP Q601, 602 2SC945LP,K
REC BIAS AMP Q801 2SC1383NC-R
REC/PLAY AMP IC401 BA328
REC AMP Q401,402 2SC945LP,K
MUTING Q403,404 2SC828T
TO PLAYER CENTER SHAFT

C	115 220 101 102 111 103 104 106 107 105 108 109 207 233 201 202 204 203 205 219 210 211 212 213 214 216 215 116 218 217 114 234 222 224 225 209 208 226 605 611 401 405 606 603 609 612 406 604 402 421 422 425 426 812 814 816 811 813 815 415 419 413 403 411 407 409 417 410 408 418 404 412 414 420 805 433 820 801 416 802 423 427 803 804 424 428 806 807 608 607 I
R	101 111 102 108 107 106 204 237 203 201 202 109 110 235 104 205 221 241 222 223 227 239 206 231 225 605 609 607 606 608 610 611 431 432 422 429 430 426 509 5 612 413 401 407 411 403 409 417 405 419 406 404 408 418 420 410 412 402 807 423 421 425 503 504 502 506 505 501 508 801 809 414 415 427 802 416 428 803 804 806 805 811 812 814 602 604 603 601 507
LST	L201 L202 L101 T101 L203 L204 L102 T202 T203 T201 L801 S4 S3 S2

*This diagram might be modified without notice for further development of technology.

DIAGRAM MODEL SG-2110

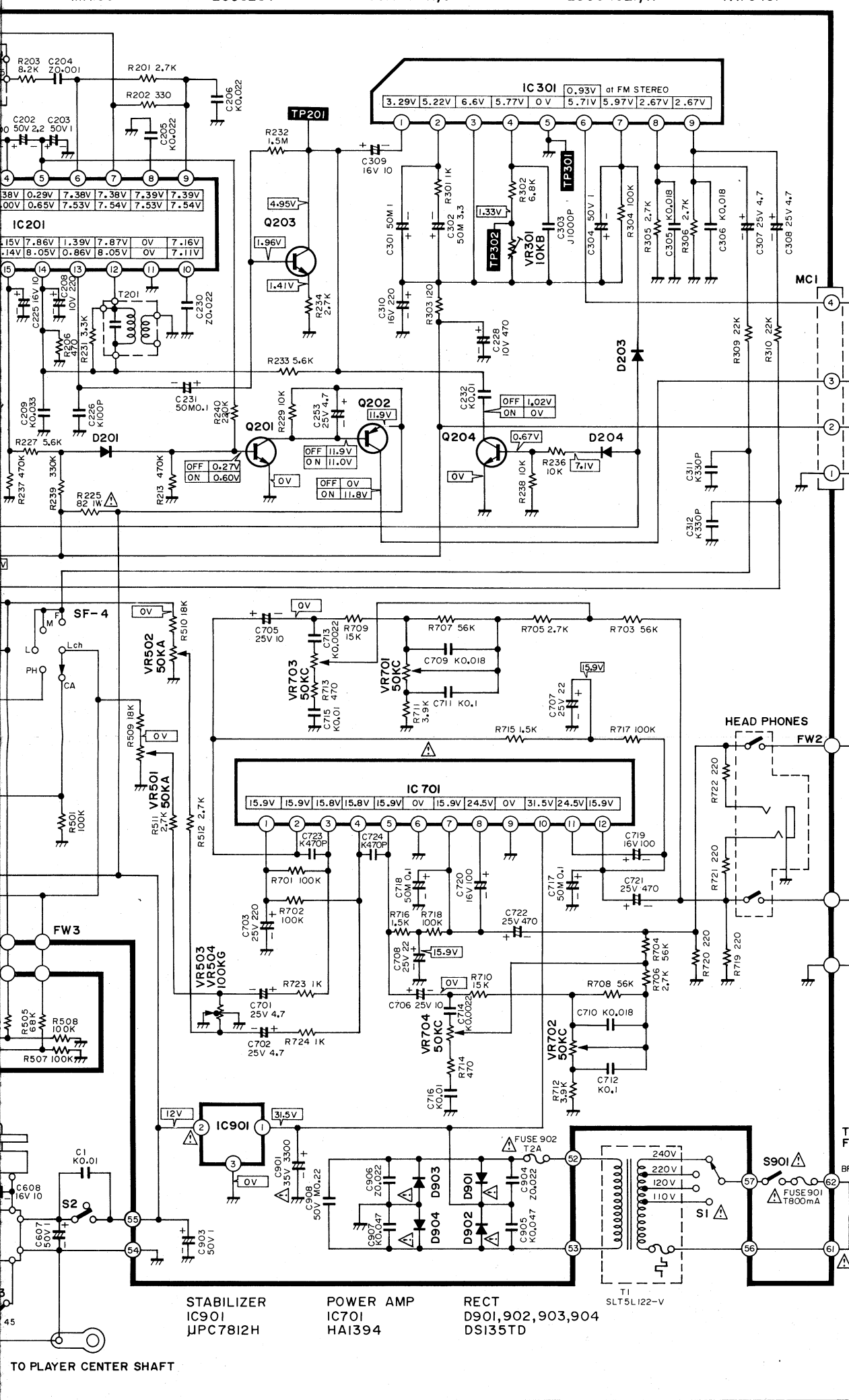
RECT
D203,204
MA150

SWITCHING
Q201
2SC828T

SWITCHING
Q202
2SA564R,S

SWITCHING
Q204
2SC945LP,K

FM MPX
IC301
TA7343P



STABILIZER
IC901
μPC7812H

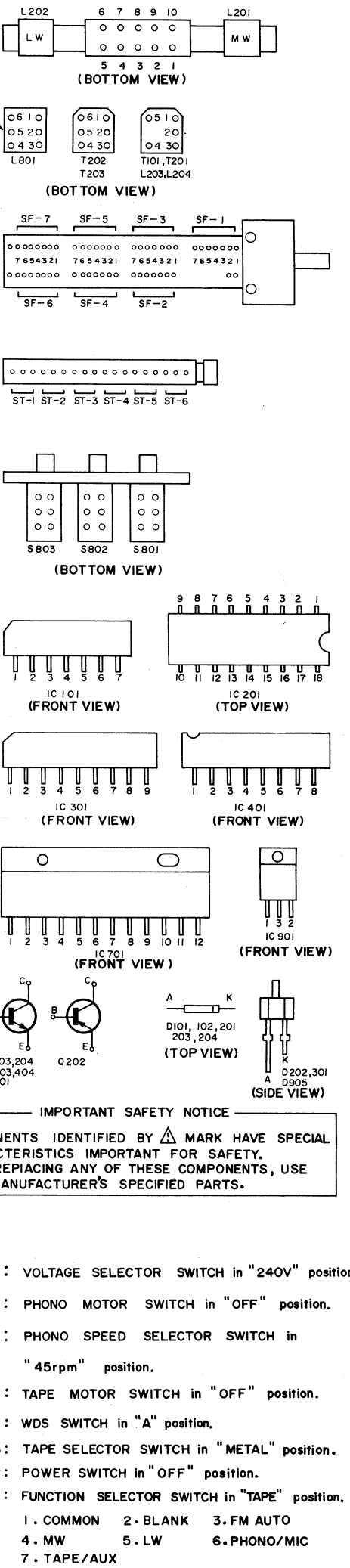
POWER AMP
IC701
HA1394

RECT
D901,902,903,904
DS135TD

FM STEREO IND.
D301
SLP-156B

POWER IND.
D905
SLP-156B

TUNING IND
D202
SLP-256B



IMPORTANT SAFETY NOTICE

COMPONENTS IDENTIFIED BY ⚠ MARK HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY MANUFACTURER'S SPECIFIED PARTS.

NOTES

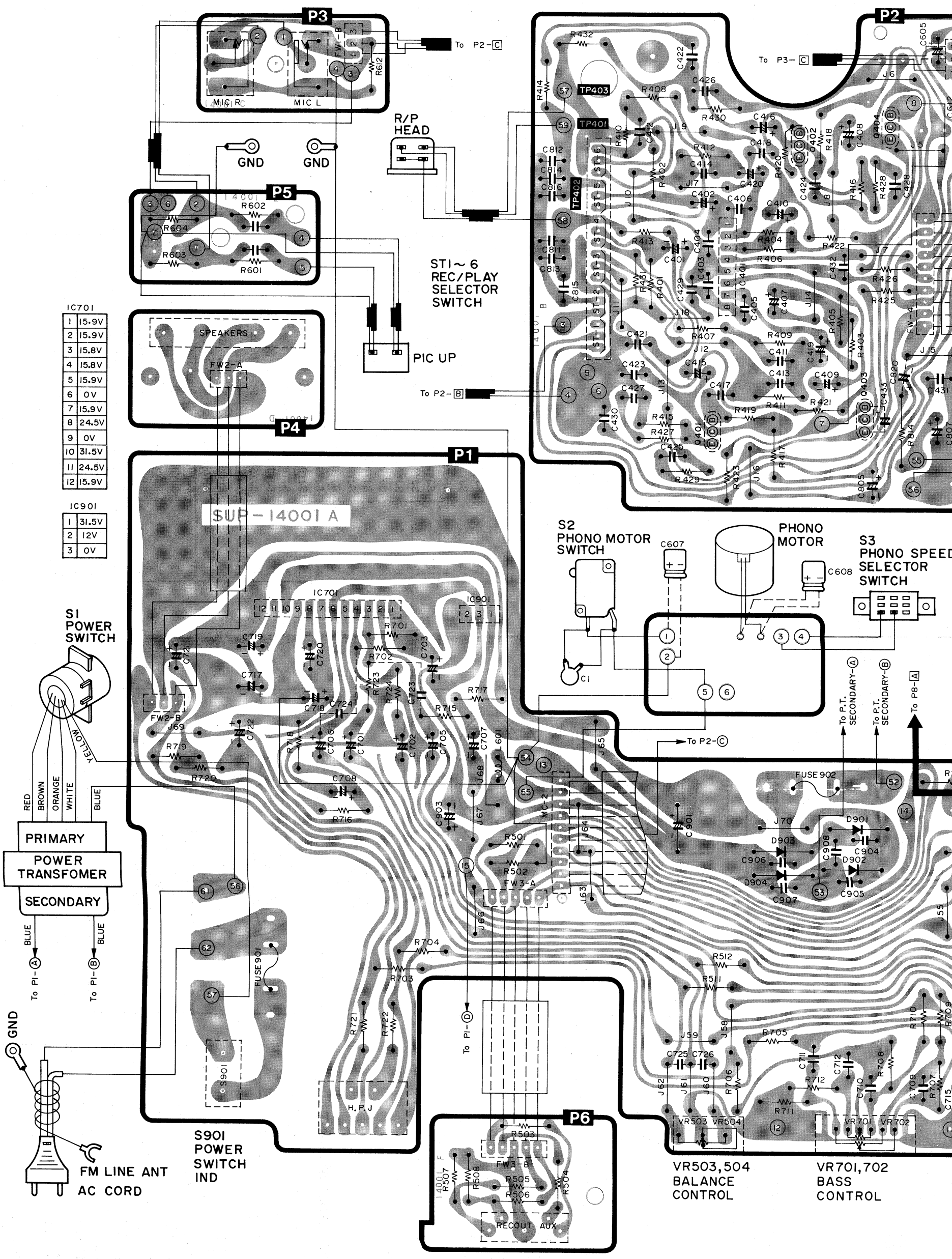
1) S1 : VOLTAGE SELECTOR SWITCH in "240V" position.
S2 : PHONO MOTOR SWITCH in "OFF" position.
S3 : PHONO SPEED SELECTOR SWITCH in "45rpm" position.
S4 : TAPE MOTOR SWITCH in "OFF" position.
S801 : WDS SWITCH in "A" position.
S802,803 : TAPE SELECTOR SWITCH in "METAL" position.
S901 : POWER SWITCH in "OFF" position.
SF1~6 : FUNCTION SELECTOR SWITCH in "TAPE" position.
1. COMMON 2. BLANK 3. FM AUTO
4. MW 5. LW 6. PHONO/MIC
7. TAPE/AUX
ST1~6 : REC/PLAY SELECTOR SWITCH in "PLAY" position.

2) Letters M, K and J indicate tolerance of capacitors as follows.
M=±20% K=±10% J=±5%

3) DC voltages of CASSETTE part are to be measured with VTVM in REC or play position.

SCHEMATIC DIAGRAM MODEL NO.SG-2110

CIRCUIT BOARD AND WIRING CONN

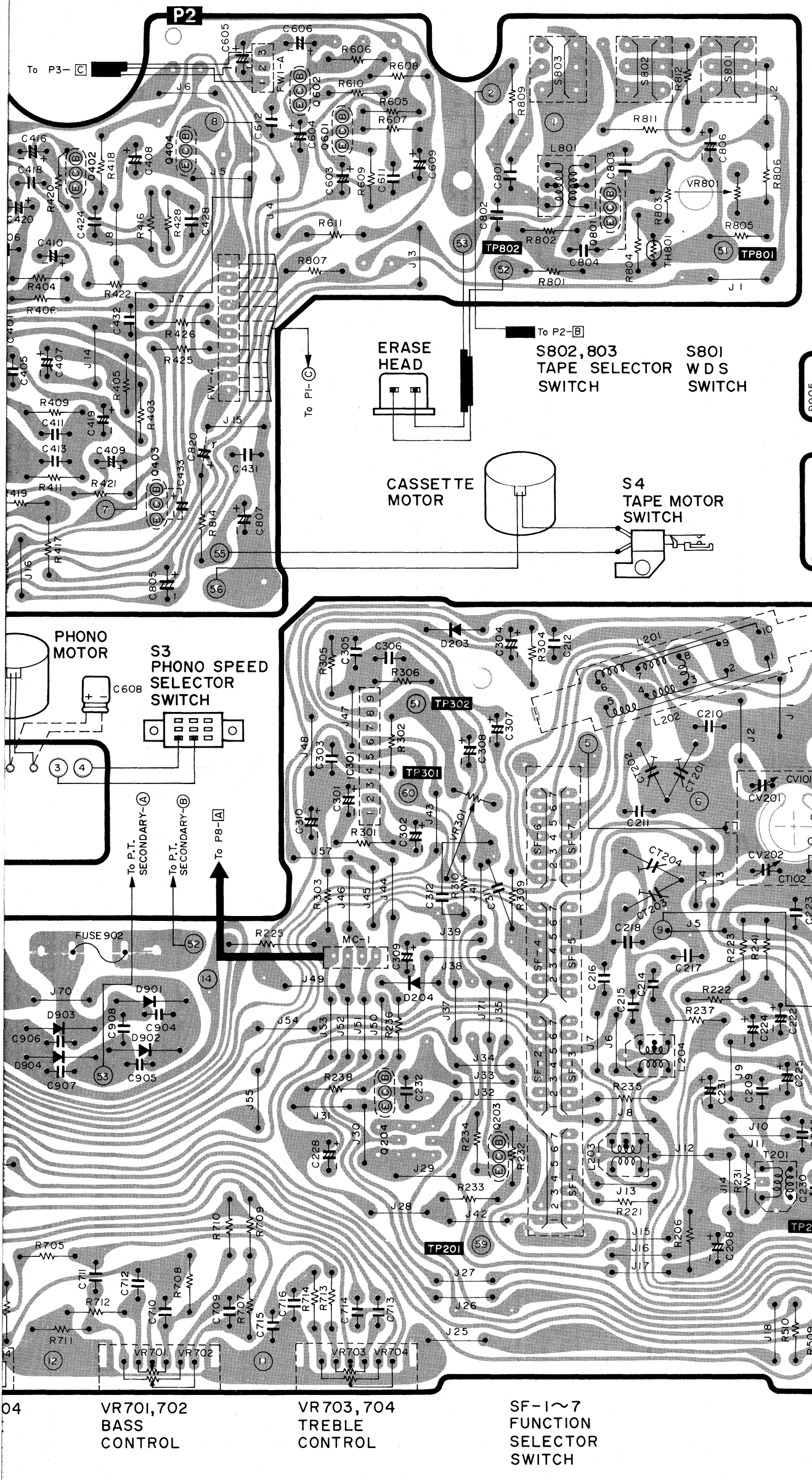


IC701	
1	15.9V
2	15.9V
3	15.8V
4	15.8V
5	15.9V
6	0V
7	15.9V
8	24.5V
9	0V
10	31.5V
11	24.5V
12	15.9V

IC901	
1	31.5V
2	12V
3	0V

* This diagram might be modified without notice for further development of technology.

ND WIRING CONNECTION MODEL SG-2110



Q 402	
C	4.24V
B	2.42V
E	1.77V

Q 404	
C	0V
B	0.71V
E	0V

Q602	
C	6.86V
B	0.67V
E	0.03V

Q601	
C	6.86V
B	0.67V
E	0.03V

Q 401	
C	4.24V
B	2.42V
E	1.77V

Q 403	
C	0V
B	0.71V
E	0V

Q801	
C	1.15V
B	0.9V
E	0.3V

IC101

1	4.10V
2	4.82V
3	4.82V
4	0V
5	5.48V
6	5.59V
7	4.23V

IC 301

1	3.29V	
2	5.22V	
3	6.6V	
4	5.77V	
5	0V	FM STEREO
6	5.71V	0.93V
7	5.97V	
8	2.67V	
9	2.67V	

Q101

C	4.15V
B	0.72V
E	0V

IC 201

	FM	AM
1	0.1V	7.68V
2	1.33V	7.68V
3	0.08V	7.68V
4	0.38V	1.0V
5	0.29V	0.65V
6	7.38V	7.53V
7	7.38V	7.54V
8	7.39V	7.53V
9	7.39V	7.54V
10	7.16V	7.11V
11	0V	0V
12	7.87V	8.05V
13	1.39V	0.86V
14	7.86V	8.05V
15	0.15V	0.14V
16	1.34V	0.1V
17	1.43V	0.1V
18	0.08V	7.67V

Q204

	OFF	ON
C	1.02V	0V
B	0.67V	
E	0V	

Q203

C	4.95V
B	1.96V
E	1.41V

Q201

	OFF	ON
C	11.9V	11.0V
B	0.27V	0.6V
E	0V	

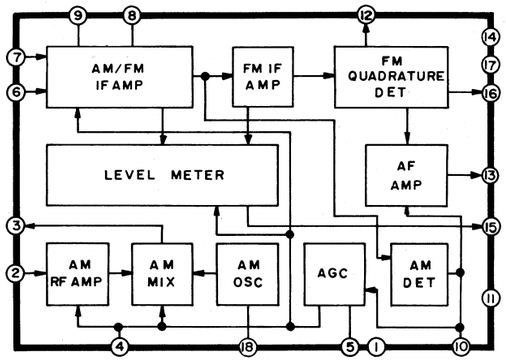
Q202

	OFF	ON
C	0V	11.8V
B	11.9V	11.0V
E	11.9V	

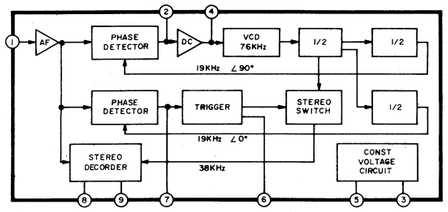
IC BLOCK DIAGRAM

Note: Refer to Common Edition of Service Manual (ORDER No. TSD-8001-362) except on page.

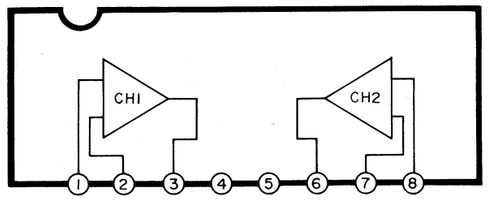
IC201 AN7222



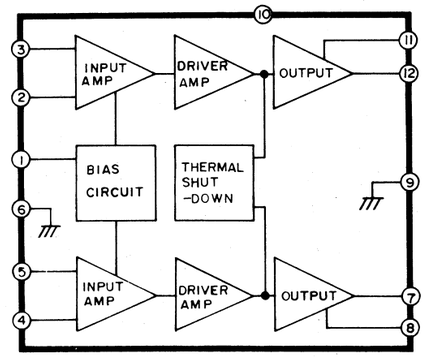
IC301 TA7343P



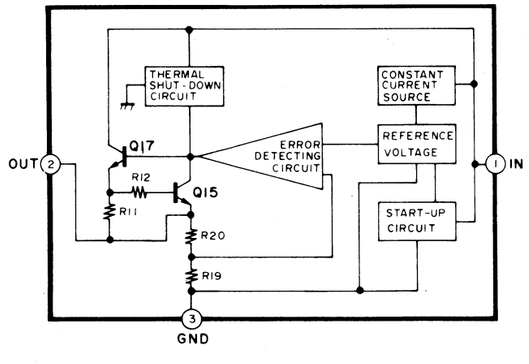
IC401 BA328



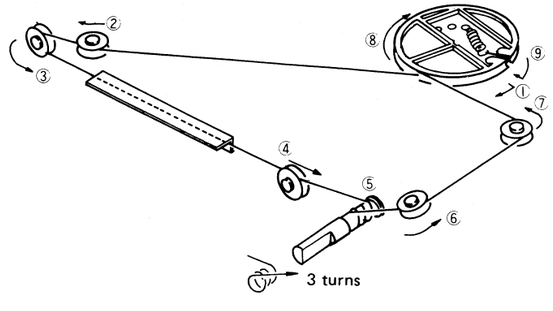
IC701 HA1394



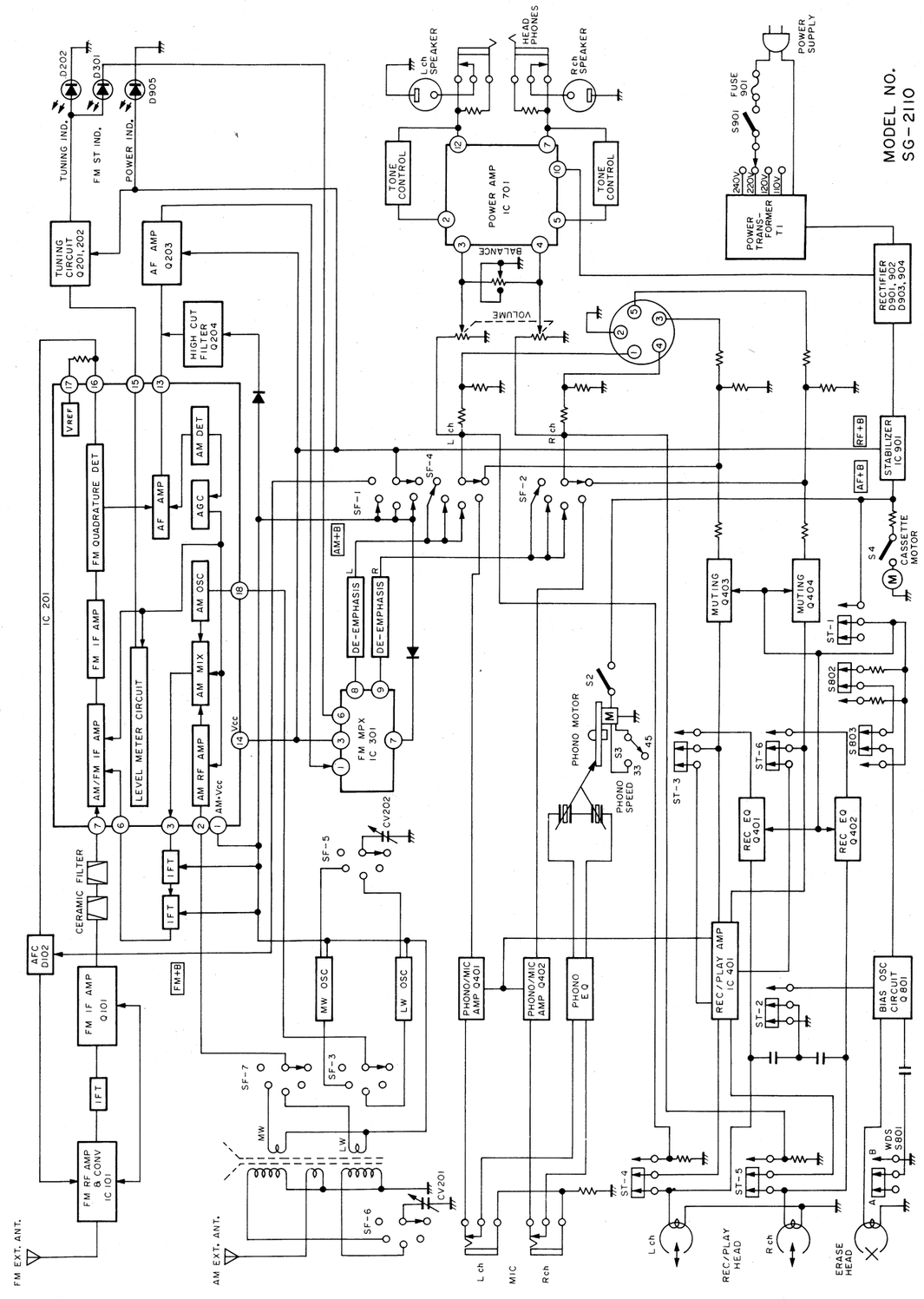
IC901 μPC78M12H



DIAL CORD STRINGING GUIDE

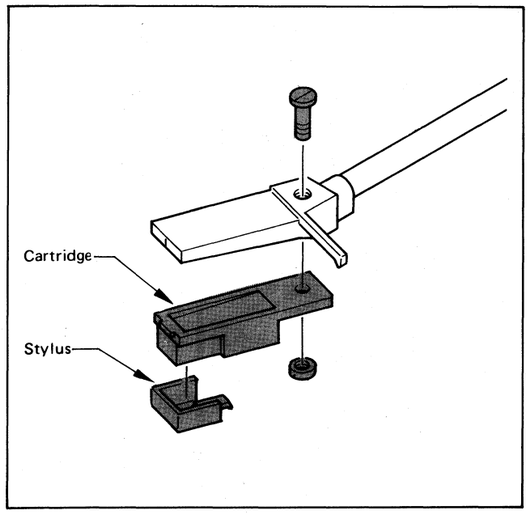


BLOCK DIAGRAM



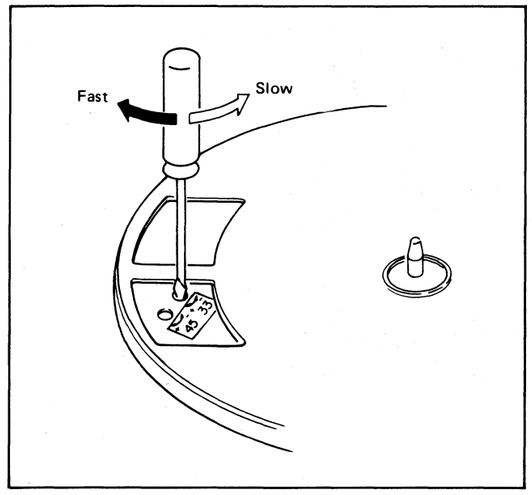
SERVICING THE RECORD PLAYER

■ CARTRIDGE AND STYLUS REPLACEMENT



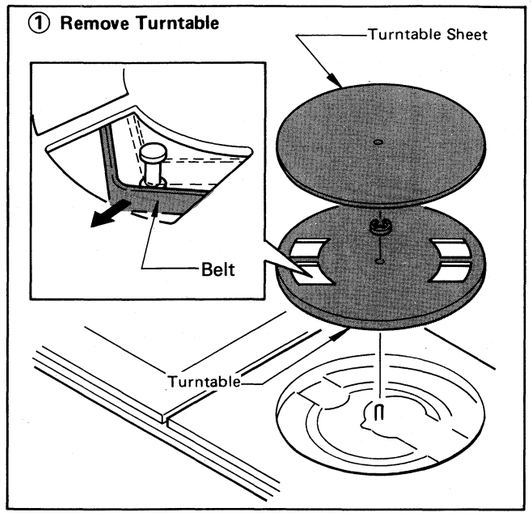
■ MOTOR SPEED ADJUSTMENT

Adjust the screw when the turntable rotation going out of normal speed.

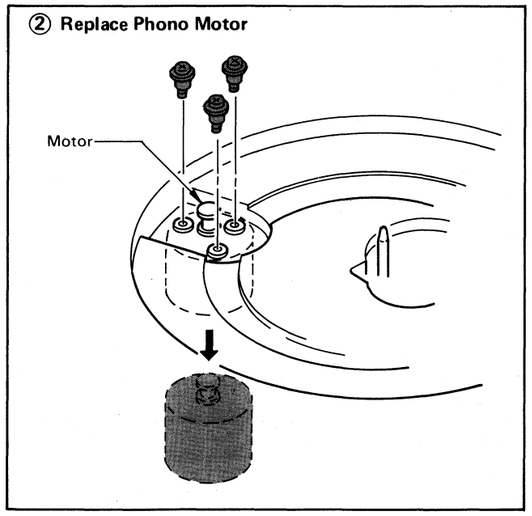


■ PHONO MOTOR REPLACEMENT

① Remove Turntable



② Replace Phono Motor

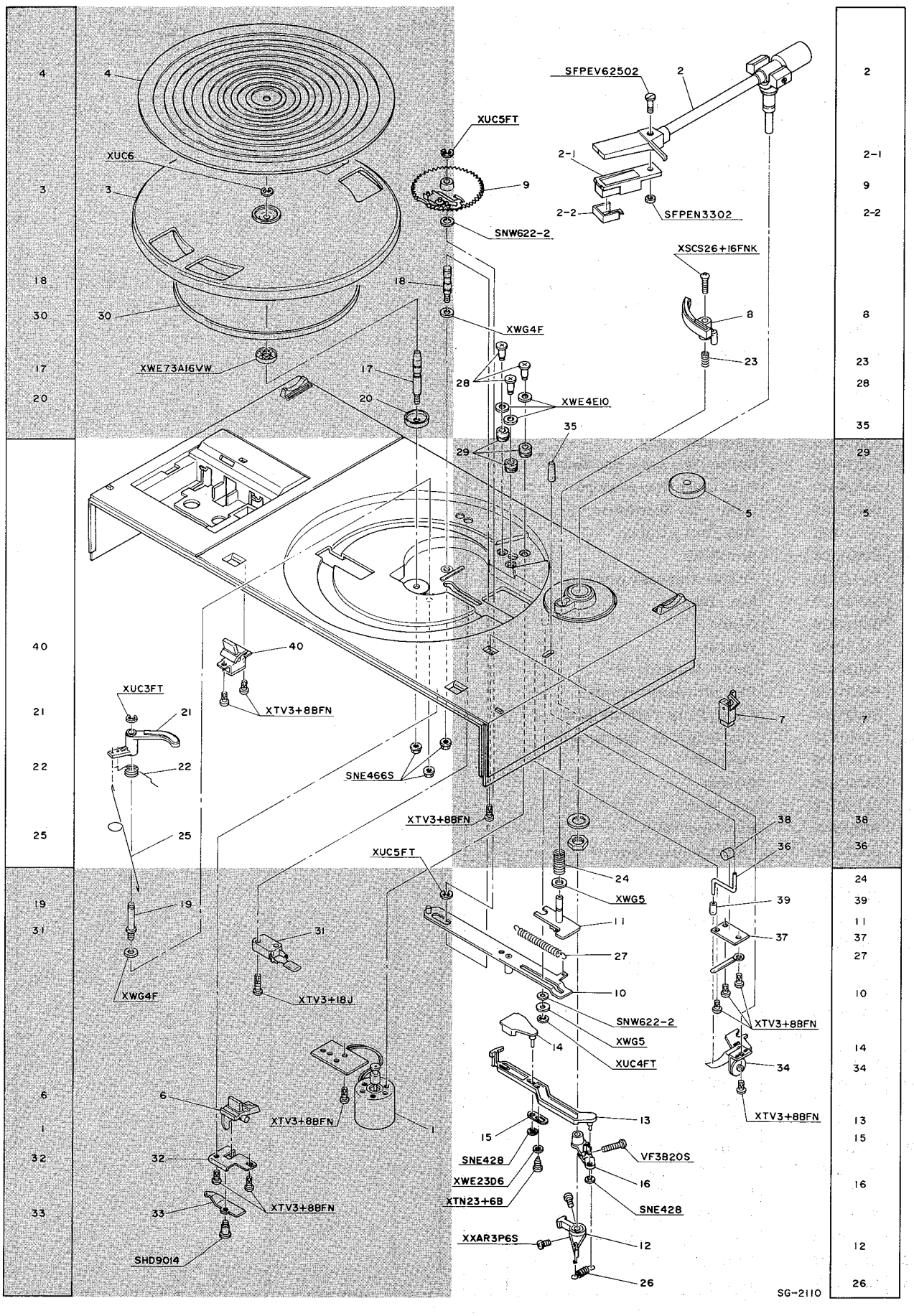


REPLACEMENT PARTS LIST OF RECORD PLAYER

Ref. No.	Part No.	Description	Per Set (pcs.)
1	MMC1170FP	Motor w/Pulley	1
2	EPU639STAD	Tone Arm Ass'y	1
2-1	EPC13STH	Cartridge w/Stylus	1
2-2	EPS41ST	Stylus	1
3	SJY160	Turntable Ass'y	1
4	SJY4038	Turntable Mat	1
5	SGE263	4.5 r.p.m Adapter	1
6	SJY202	Knob Ass'y, Cut	1
7	SJY350	Arm Rest Ass'y	1
8	SJY5148-3	Lefter	1
9	SJY32-4	Gear Ass'y	1
10	SJY178	Operating Plate Ass'y	1
11	SJY5164	Shaft, Lift	1
12	SJY9016-3	Lever Switch	1
13	SJY9042	Actuating Plate	1
14	SJY9044-1	Stop Plate Switch	1
15	SJY9046	Bracket, Switch Control	1
16	SFUM623-4E	Lever, Turntable	1
17	SJY9388-2	Shaft, Turntable	1
18	SJY9392	Shaft, Gear	1
19	SJY9376	Shaft, Reject Arm	1
20	SJY9380	Bracket, Turntable	1
21	SJY9268	Reject Arm	1
22	SJY9266	Spring, Reject	1
23	SJY9396-1	Spring A, Lift	1
24	SJY9230	Spring B, Lift	1
25	SJY9718	Cut Wire	1
26	SJY9056	Spring, Tone Arm Plate	1
27	SJY9062	Spring, Operating	1
28	SJY9288	Screw, Motor	1
29	SHG9092	Rubber	3
30	SFGB321-1	Turntable Belt	1
31	AH7550360	Micro Switch	1
32	SJY9720-1	Bracket, Cut Lever	1
33	SJY9722	Bracket, Cut	1
34	SJY272-3	Sliding Board Ass'y	1
35	SJY5050	Knob, Cueing	1
36	SJY9738-1	Cueing Lever	1
37	SJY9256	Clamper, Cueing Lever	1
38	SJY9258	Rubber, Lever	1
39	SJY5054	Knob, Lever	1
40	SSL12-7	Speed Selector Switch	1

Ref. No.	Part No.	Description	Per Set (Pcs.)

EXPLODED VIEW OF RECORD PLAYER

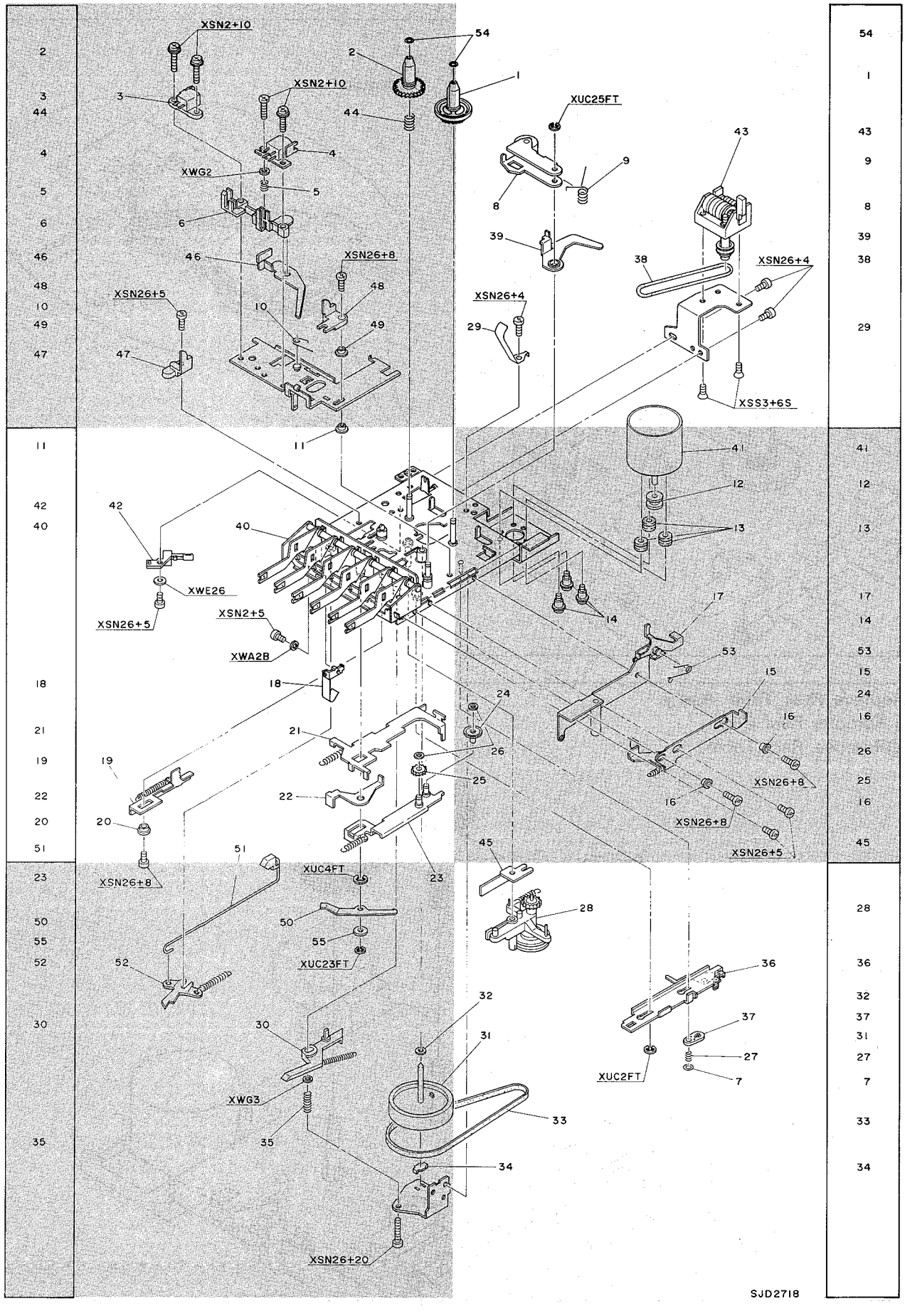


REPLACEMENT PARTS LIST OF CASSETTE TAPE DECK (SJD2718)

Ref. No.	Part No.	Description	Per Set (pcs.)
1	SMQ4032	Reel Ass'y, Take up	1
2	SMQ4034	Reel Ass'y, Supply	1
3	SJH62	Erase Head	1
4	SJH78	R/P Head	1
5	SMQ678	Spring, R/P Head	1
6	SMQ1986	Head Base	1
7	SMQ2450	Washer	1
8	SMQ2482	Pressure Roller Ass'y	1
9	SMQ2484	Spring, Pressure Roller	1
10	SMQ3280	Spring, Head Panel	1
11	SMQ1648	Collar, Head Panel	1
12	SMQ1662	Pulley, Motor	1
13	SMQ1834	Rubber Cushion, Motor	3
14	SMQ1908	Screw, Motor	3
15	SMQ2726	Slide Lever, Eject w/spring	1
16	SMQ1426	Collar, Eject Slide Lever	2
17	SMQ4036	Eject Hook Ass'y	1
18	SMQ4038	Spring Plate Ass'y, Rec Switch	1
19	SMQ4040	Slide Lever, Play w/spring	1
20	SMQ1426	Collar, Play Slide Lever	1
21	SMQ1926	Main Plate w/spring	1
22	SMQ1928	Arm, RWD	1
23	SMQ1922	FF Idler Arm Ass'y w/spring	1
24	SMQ1450	Idler, Take up	1
25	SMQ1924	Gear, FF	1
26	SMQ1952	Washer	2
27	SMQ2448	Spring, Pause Lever	1
28	SMQ1930	RF Clutch Ass'y w/spring	1
29	SMQ1394	Spring Plate, Cassette Hold	1
30	SMQ1918	Auto Stop Kick Lever w/spring	1
31	SMQ1942	Flywheel	1
32	SMQ1940	Washer	1
33	SMQ2732	Belt, Main	1
34	SMQ2538	Pad, Flywheel	1
35	SMQ1948	Thrust Spring, Flywheel	1
36	SMQ2568	Pause Slide Lever Ass'y w/spring	1
37	SMQ2444	Lever, Pause	1
38	SMQ1056	Belt, Counter	1
39	SMQ2486	Lever, Arm	1
40	SMQ4042	Frame Ass'y, Button	1
41	EG510ED2F	Motor	1
42	SMQ4044	Leaf Switch	1
43	SMQ2702-1	Counter	1
44	SMQ2512	Spring, Supply Reel	1
45	SMQ2724	Spring Plate, RF Clutch	1
46	SMQ1900	Lever Ass'y, Auto Stop	1
47	SMQ3278	Guide A, Cassette	1
48	SMQ3160	Guide B, Cassette	1
49	SMQ3162	Collar, Cassette Guide B	1
50	SMQ4046	Stopper, RWD	1
51	SMQ3290	Rec Safety Spork Ass'y	1
52	SMQ1934	Rec Safety Lever w/spring	1
53	SMQ4048	Spring, Eject Hook	1
54	SMQ4050	Washer	2

Ref. No.	Part No.	Description	Per Set (pcs.)

EXPLODED VIEW OF CASSETTE TAPE DECK (SJD2718)

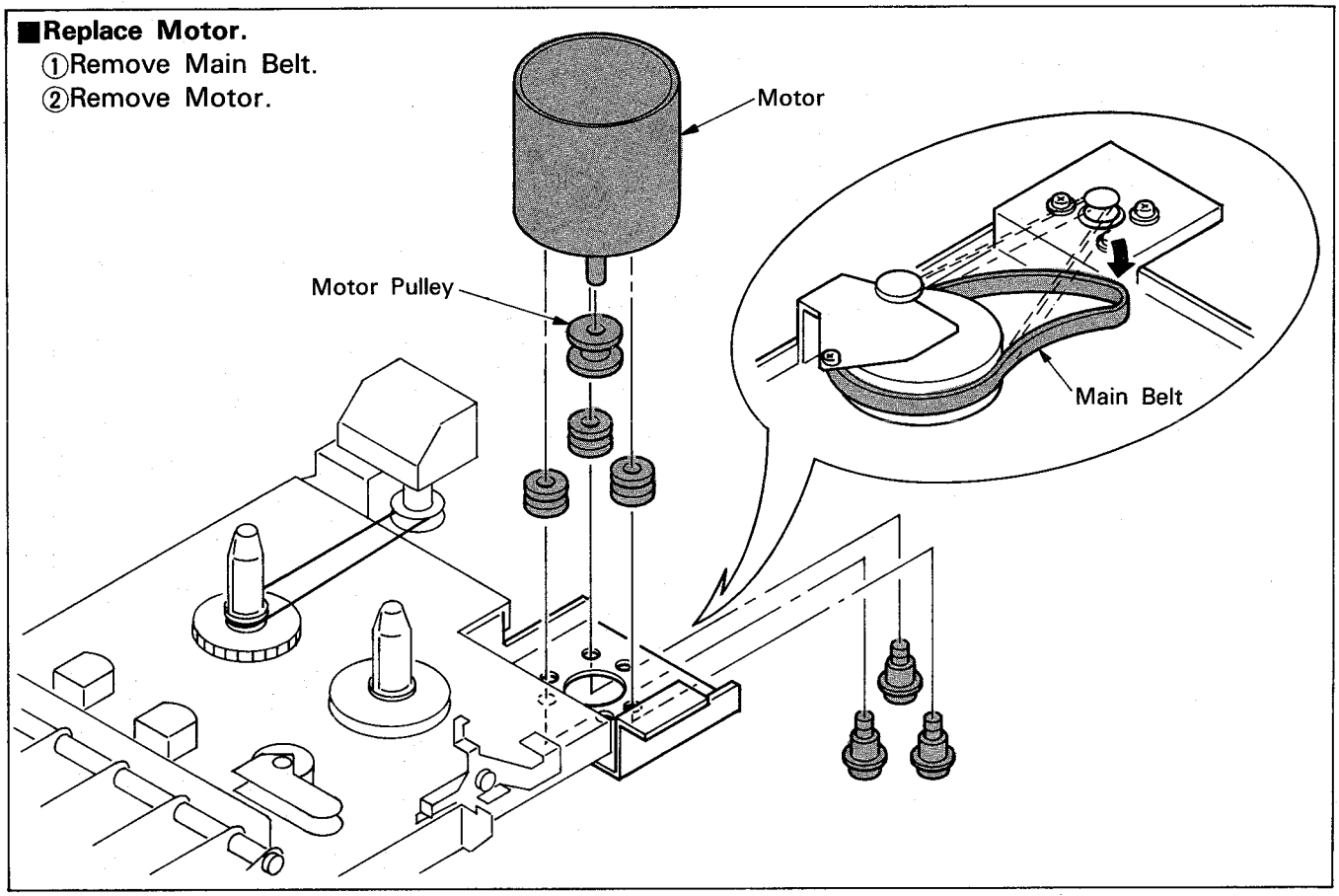


SERVICING THE CASSETTE TAPE DECK-1

■Replace Motor.

①Remove Main Belt.

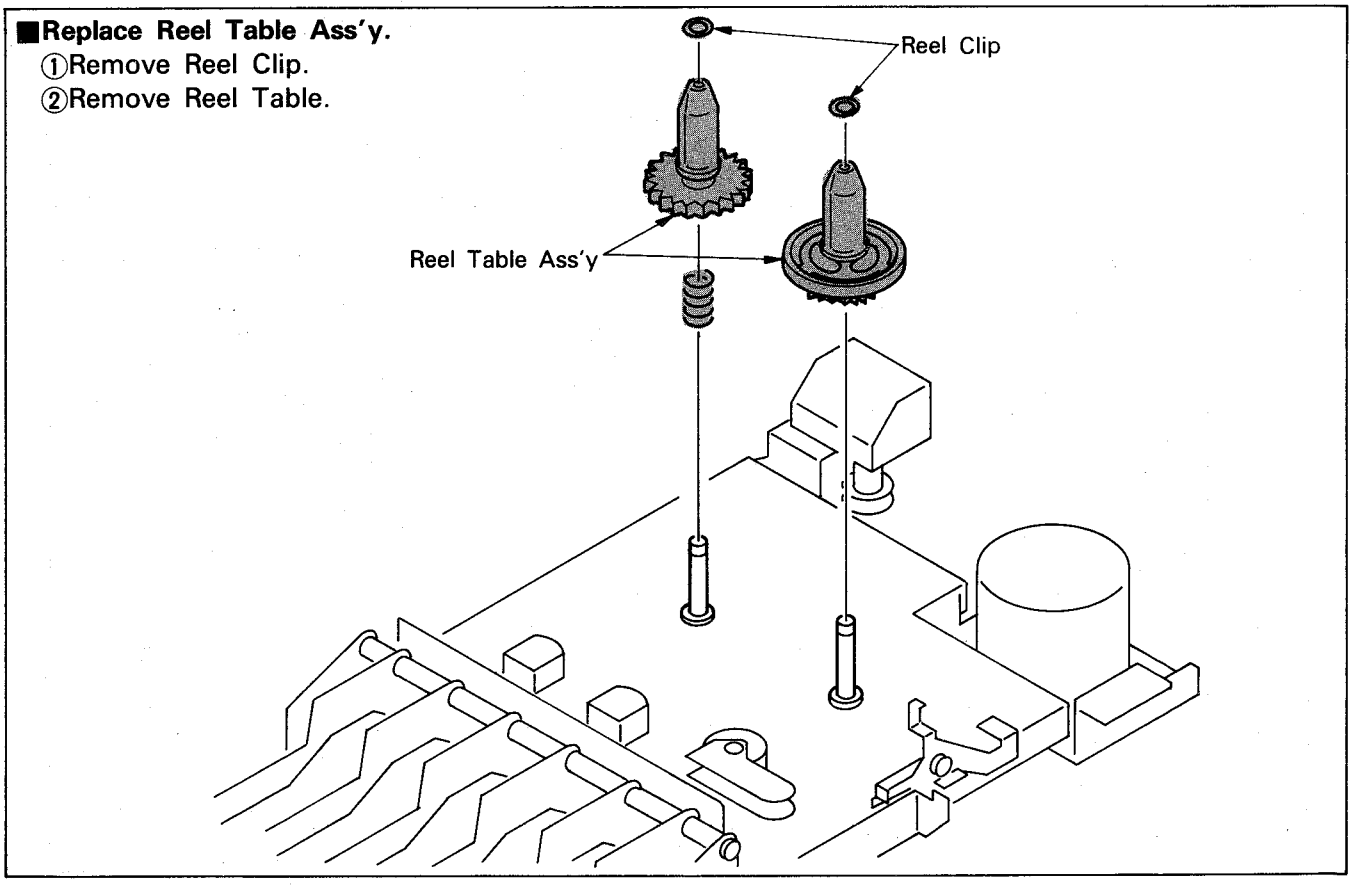
②Remove Motor.



■Replace Reel Table Ass'y.

①Remove Reel Clip.

②Remove Reel Table.

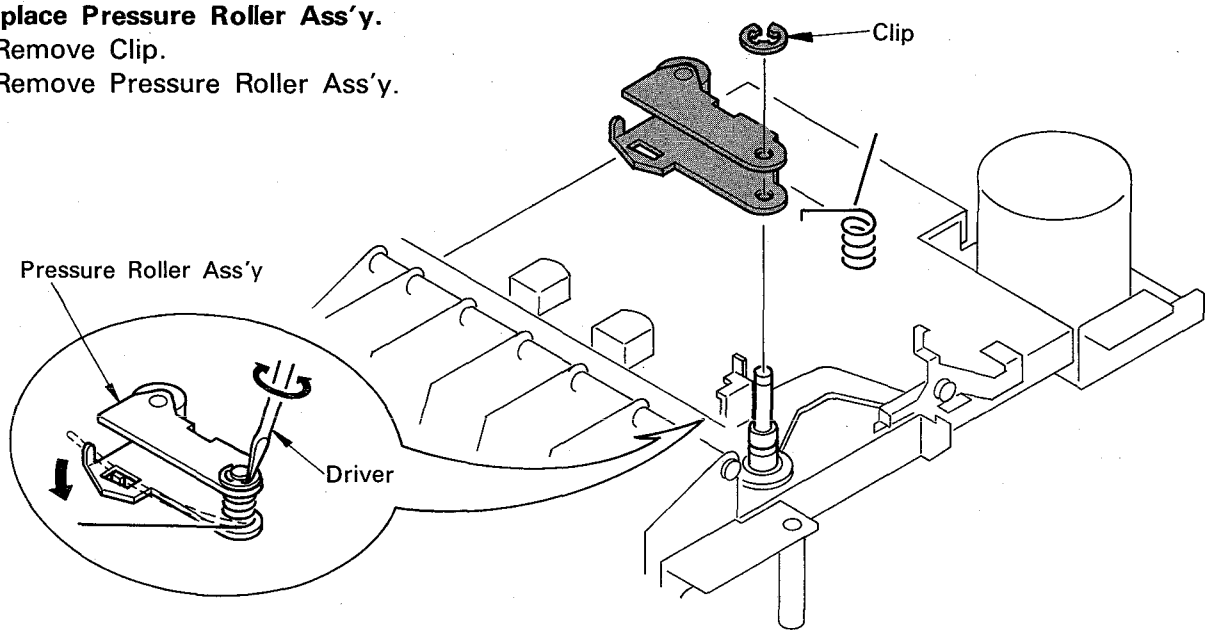


SERVICING THE CASSETTE TAPE DECK-2

■Replace Pressure Roller Ass'y.

①Remove Clip.

②Remove Pressure Roller Ass'y.



■Remove Main Belt and Flywheel.